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D50051.1 GI:
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Streptomyces griseus
Bacteria; Firmicutes; Actinobacteria; Actinobacteridae;
Bacteria; Firmicutes; Actinobacteria; Actinobacteridae;
                            Cloning and characterization of a gene involve sporulation and cell division of Streptomyces Actinomycetol. 9, 136-151 (1995)
                                                           Kawamoto, S.
                                                                                                             Streptomyces griseus (strain: B2682) DNA.
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           Kawamoto, S.
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438; Conserv
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Shinichi,K. and Ensign,J.
Cloning and characterization of a gene cell division of Streptomyces griseus unpublished (1995)
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Expression analysis of the ssgA gene product, associated wit
sporulation and cell division in Streptomyces griseus
Microbiology (Reading, England) 143 (Pt 4), 1077-1086 (1997)
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GRELLLDGLMSPSGDGDVHIGPTEPBGLGDVHIRTLQVGADRALFRAGTAPLVAFLDRT
DKLVPLGQEHTLGDFDGNLEDALGRILAEEQNAG"
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/strain="B2682"
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ggcgcggaccgtgcgctgttccgggcggggacggcaccgctggtggcgttcctcgaccgg
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Bacteria; Firmicutes; Actinobacteria; Streptomyces.
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Patent: WO 0000613-A 3 06-JAN-2000;
UNIV LEIDEN (NL); KRAAL BAREND (NL);
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Kraal, B., Luiten, R.
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Sequence 3 from Patent
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/db_xref="taxon:1911"
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/protein_id="AAG28483.1"
/protein_id="AAG28483.1"
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/translation="MRESVQAEVLMSFLVSEELSFKIPVELRYETRDPYAVRMTFHLP
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Q9xvd2 caenorhabdi
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"Expression analysis of a ssqA gene product associated with	., Hesketh A., Ensign J.C., Och	91416/3;	STRAIN-B2682;	SEQUENCE FROM N.A.	[4]	Nippon Hosenkin Gakkaishi 9:136-151(1995).	sportlation and cell division of Streptomyces griseus.";				SEQUENCE FROM N.A.	[3]	Nippón Hosenkin Gakkaishi 9:124-135(1995).		"Isolation of mutants of Streptomyces griseus that sporulate in	Ensign J.C.;	STRAIN-B2682;	SEQUENCE FROM N.A.	[2]	Submitted (APR-1995) to the EMBL/GenBank/DDBJ databases.		zation	Ensign J.;	STRAIN-B2682;	SEQUENCE FROM N.A.	[1]	NCBI_TaxID=1911;	Actinomycetales; Streptomycineae; Streptomycetaceae; Streptomyces.	rmicutes; Actinobacteria; Actinobacterio	Streptomyces griseus.	SSGA.	01-DEC-2001 (TremBirel. 19, Last annotation update)	03, Last	POSEMBY 64 007 FFFEMRITE 03. Created)		DOS753 DREITMINARY: DRT: 136 AA.	753	

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"Cloning and sequencing of the Streptomyces netropsis ssgA
"Cloning and sequencing of the EMBL/GenBank/DDBJ databases.
Submitted (OCT-1999) to the EMBL/GenBank/DDBJ databases.
EMBL; AF195772; AAG28483.1; -
SEQUENCE 145 AA; 15838 MW; 92ACOF3ODF3D2620 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                     Streptoverticillium netropsis (Streptoverticillium flavopersicus). Bacteria; Firmicutes; Actinobacteria; Actinobacteridae; Actinomycetales; Streptomycineae; Streptomycetaceae; Streptomyces.
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Bacteria; Firmicutes; Actinobacteria;
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van Wezel G.P., Rousseau C., Kraal B.;

"Cloning and sequencing of the Streptomyces goldeniensis
Submitted (OCT-1999) to the EMBL/GenBank/DDBJ databases.
EMBL; AF195770; AAG28481.1; -.

SEQUENCE 135 AA; 14843 MW; 32006CC86BDE4ED6 CRC64;
                                                                                                                                                                                                                                            "A set of ordered cosmids and a detailed genetic the 8 mb Streptomyces coelicolor A3(2) chromosome Mol. Microbiol. 21:77-96(1996).
EMBL; ALO96823; CAB46964.1; -.
SEQUENCE 136 AA; 14920 MW; 4B67CIF1E0BECC88 C
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NCBI_TaxID=121022;
                                                                                                                                                                                                                                                                                                                                                                                                          STRAIN=A3(2);
MEDLINE=97000351; PubMed=8843436;
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NCBI_TaxID=1902;
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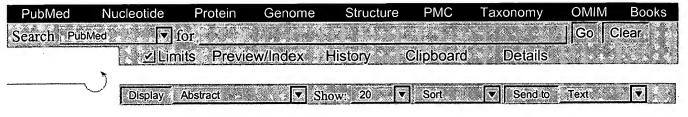
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VHIGPTEPEGLGDVHIRLQVGADRALFRAGTAPLVAFLDRTDKLVPLGQEHTLGDFDGNL 120









1: Microbiology. 1997 Apr;143 (Pt 4):1077-86.

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Expression analysis of the ssgA gene product, associated with sporulation and cell division in Streptomyces griseus.

Kawamoto S, Watanabe H, Hesketh A, Ensign JC, Ochi K.

PubMed Services

National Food Research Institute, Ibaraki, Japan. taishi@ss.nfri.affrc.go.jp

The ssgA gene of Streptomyces griseus B2682, when present in high copy number, results in both suppression of sporulation and fragmented growth of mycelia. Western analysis with polyclonal antibodies against the gene product (SsgA) revealed a close correlation between SsgA accumulation and the onset of sporulation in wild-type cells. The protein was only detected in the cytoplasm. Certain developmental mutants of S. griseus (afs, reIC and brgA) which are defective in aerial mycelium formation in solid culture and submerged spore formation in liquid culture failed to accumulate SsgA. The SsgA protein appeared shortly (1 h) after nutritional shift-down of strain B2682 cells. afs mutant cells sporulated and expressed SsgA only when A-factor was present both before and after nutritional shift-down. Introduction of the ssgA gene in a low-copy-number vector into strain B2682 resulted in fivefold overexpression of SsgA, and was accompanied by fragmented growth of mycelia and suppression of submerged spore formation (in liquid culture) and aerial mycelium formation (in solid culture). Streptomycin production was not inhibited. In a control experiment, a nonfunctional ssgA gene possessing a frameshift mutation near its N-terminus had no effect on either growth or sporulation. It is proposed that the ssgA gene product plays a role in promoting the developmental process of S. griseus.

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PMID: 9141673 [PubMed - indexed for MEDLINE]

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part : INTEGRAL b. Law. Designating ital laws and principles of a government f or designating carbon compounds.

The chemistry of carbon compounds in z'm) n. 1. The theory that all diseases alterations of organs. 2. The theory that an organism, rather than the functioning e principal or exclusive determinant oncept that society is analogous to all 'i-cist D.

) n. 1. A plant or animal < microso garded as analogous to a living body on is mal (-nīz'məl), or gan is mic will

One who plays the organ. ni-zā'shən) n. 1. An act or instance of of being organized. 2. The state or minimum loose organization of political interpretation. ganized or made into an ordered when elements with varied functions that it to collective functions : ORGANISM: 17 oups having specific responsibilities in pose. -or gan i za'tion al adi -ore

-ized. -iz-ing, -iz-es. [ME organize at. organum, instrument < Gk. organin semble into an orderly, structured fine e a coherent form to: SYSTEMATIZE compose in a desired pattern or structu nized about a young reaper enjoying Carlos Williams > 3. To manage or arrange or harmonious action corganize almosas an organization corganize a political employees) to form or join a labor union rees of (a business or industry) to format a steel mill > -vi. 1. To develop into ire. 2. a. To form a group, as a laborum or'gan-iz'er n.

ef. [ME < Med. Lat. organum, organicalis -see ORGAN.] 1. Organ <organother :urial>

ðr-gán'a-klôr'ēn', -ĭn, -klōr'-) n. Any otar des, as DDT, that contain chlorine. tē) n. [After Alfonso Corti (1822-1888)] sted on the inner surface of the basilar at contains a series of sensory receptors

r'go-nō-jēn'ī-sīs, ôr-găn'o-) n., pl. -es t of biological organs. -or gan organ ro-ge-net'i-cal·ly adv. 'ga-nog'ra-fe) n. Scientific description

imals. -or gan o graph ic adj. -or

39-nő-lép'tik, ôr-gán's-) adi. [Fr. orangio Lat. organum, implement < Gk. organum < lambanein, to take.] Relating to answer in. —or'gan·o·lep'ti·cal·ly adv.

nol'a-je) n. Study of the structure and aal organs. —or gan o log'ic (ôr gan 'i-cal adj. al (ôr-gān'ō-mər-kyoor'ē-əl) n. An

also organum (-nəm) n., pl. -na

et of methods or principles used in significant (ôr'ga-nō-ther'a-pe, ôr-găn'ō-) n. Treatt

cans or extracts such as thyroxin and i'tic (-ther'ə-pyoo'tik) adi. (ôr'gə-nör'ıə-piz'əm) also organotin

on of a chemical compound or a micro
tissues or organs. —organ-otropic us (organ-pip') n. A tall cactus, Paching Mexico and the

Mexico and the southwestern United dal point. m) n., pl. -na (-na) or -nums. [Med

GAN.] Vocal polyphonic music of the three, or four voice parts. m) n. var. of ORGANON.

n. [Orig. unknown.] A sheer, stiff, for trimming, neckwear, or evening zěn') n. [Fr. organsin < Ital. organzina] as a warp thread.

e äfather ëpet ëbe hwwhich t o toe o paw, for oi noise

organ (6reaz am) n. [Fr. orgasme < Gk. orgasmos < organ, to The climax of sexual excitement, marked will be decided in the control of the con mmuly by space rectile; organs of both sexes. —orgas'mic (ôrgaz'-

mik), orgas'tic adj. mil), argue (10/2h2') n. [Fr. < OFr. < OProv. origit < ordf, barley < Lat. Asweet syrup of almond and orange used to flavor cock-

tails and food is and route (or je 45 tik) adj. [Gk. orgiastikos < orgia, secret rites.] Of relating to or characteristic of an orgy.

(B) (G/je) IL, pl. -gies. [< orgies, secret rites < OFr. < Lat. orgia < orsy (A.) A secret rite in the cults of ancient Greek or Roman deities, Ck.] A secretary involving frenzied dancing, singing, drinking, and sexual prically, involving unrestrained indulgence, esp. sexual activity. 2 A revel involving unrestrained indulgence, esp. sexual activity. inity 3. Excessive indulgence in a specific activity (an orgy of

oribi (or be, or.) n., pl. oribi or oribia. [Afr. < Hottentot arab arrunda voide with strips + -b, masc noun-forming suffix.] A much howaish African antelope, Ourebia ourebia

oriel (of e.g., or) n. [ME < Med. Lat. oriolum, porch.] A projection by window, supported from below with a corbel or bracket. orient (ore-ont, enr', or') n. [ME < OFr. < Lat. oriens, rising sun, mad Asia; esp. of eastern Asia. b. Archaic. The territories east of the Mediterranean 3. a. The luster characteristic of a pearl of high multy. A pearl having exceptional luster.—adj. 1. Archaic. East-cal oriental 2. Having a high luster <orient gensiones > 3. Artheic Rising in the sky : ASCENDING .- v. (ôr'e-ent'; ôr'-) enting entermyt. 1. To place or locate in a specified relation to the points of the compass corient, the windows toward the south To place or locate so as to face the east. b. To build (a church) with the nave laid out west to east and the altar at the eastern end. 1. To align or position relative to a reference system. 4. To determine the bearings of corient oneself by using a map > 5. To cause to become familiar with or adjusted to a situation or circumstance corient a new employee to company policy > -vi. 1. To turn myard the east 2 To become adjusted or aligned.

orien tal (or e en'tl, or'.) adj. 1. Eastern. 2. often Oriental. Relatint to the countries or regions of the Orient or to their peoples, languages, of culture ... 3. Oriental. Ecol. Of or designating the mographic region that includes tropical Asia and the adjacent islands of the Malay Archipelago: 4. Lustrous and valuable can oriental pail > 5. Designating precious varieties of corundum < an oriental mby ... n. often Oriental. A native or inhabitant of the Orient. o'rien'tality adv

Orientalism also o-ri-en-tal-ism (ôr'ē-ĕn'tl-ĭz'əm, ôr'-) n. LA quality or custom peculiar to or characteristic of the Orient. Scholarly knowledge of eastern cultures, languages, and peoples: Orien'tal ist n.

Orientalize also orientalize (ôr'ē-ěn'tl-īz', ōr'.) v. -ized, sping dzesvt. To give an Oriental character or appearance to: 7i To become Oriental

riental poppy n. A plant, Papaver orientale, orig. of the Meditranean region, widely cultivated for its brilliant scarlet and black

Oriental rug n. A rug made by hand in the Orient. rientate (ôrē en tat', -on-, ōr'-) vt & vi -tat-ed, -tat-ing, tetes. To orient.

orientation (or e-en-ta'shan, an-, or -) n. 1. An act of orienting I the state of being oriented. 2. Location or position relative to the rains of the compass. 3. Construction of a church so that its longitudual arts is from west to east and its main altar at the eastern end. The line or direction followed in the course of a trend, movement, a development 5. A general inclination <a Freudian orientation> Adjustment or adaptation to a new environment, situation, or beld 7. Psychol. Individual awareness of the objective world in its

reation to the self. 8. Introductory instruction concerning a new menteering (ôre en-tiring, son, ôr's) n. (Orig. a trademark.) conscountry race in which competitors follow a course through

mamiliar territory using a map and compass. wifice (or office a map and compassion of the (or office a mouth the form, to make). A mouth or yent offenned of the contract oifiamme (or a flam', or) n [ME oriflamble < OFr. oriflambe Med lat quriflamma : Lat. aurum, gold + Lat. flamma, flame.] the red flag of the Abbey of St. Denis, France, once a royal stanand france 2 An inspiring symbol or standard.

reace. 2. An inspiring symbol or standard.

"The symbol of standard in the symbol or standard in the symbol of symbol or standard in the symbol or standard in the symbol of symbol or standard in the symbol of symbol or standard in the symbol or standard in the symbol of symbol or standard in the symbol of symbol or standard in the symbol or symbol or standard in the symbol or symbol or standard in the symbol or symbo

wind (or silla, or) n. [ME origine, ancestry Lat. origo < original (or silla, or) n. or old or origination source. 2. Ancestry : derivation e cannot escape our origins, however hard we try". -lames Acoming into being <the origins of World War I and

about the thing the this dicut drugge, y young

the sethivision, a about, item, edible, gallop, circus

World War II> 4. Anat. The point of attachment of a muscle. 5. Math. The point of intersection of coordinate axes, as in the Cartesian coordinate system... * syns: Origin, derivation, fountain, provenance; prove-

NIENCE, ROOT, SOURCE, SPRING, WELL n. core meaning: a point of origination < the origin of Western civilization >

original (a-rija-nal) adj. [ME < OFr. < Lat. originalis < origo, source < oriri, to rise.] 1. Preceding all others in time: FIRST.
2. a. Not derived from something else <an original script, not an adaptation > b. Showing a marked departure from previous practice : NEW. < a truly original design > 3. Productive of new things or new ideas: INVENTIVE. 4. Being the source from which a copy, reproduction, or translation is made...-n. 1. A first form from which varieties arise or imitations are made < Newer models are much lighter than the original > 2. An authentic work of art, as distinguished from an imitation or reproduction: 3. One that is the model for a literary or

artistic creation. 4. One that is odd or singular: ECCENTRIC.
originality (a-nij'a-nil'I-të) n., pl. -ties. 1. The quality of being original. 2. Capacity for independent thought or action. 3. Something original.

originally (a-rij'a-na-le) adv. 1. With reference to origin. 2. At first. 3. In a highly distinctive way <originally dressed>

original sin n. The condition of sin that marks all human beings as a result of Adam's first act of disobedience.

originate (anijanăt) -nated, -nating, -nates. -vt. & vi. To bring or come into being. —o-rig'i-na'tion n. —o-rig'i-na'tive adj.
—o-rig'i-na'tive-ly adv. —o-rig'i-na'tor n.

o-ri-na-sal (ôr's-na'zəl, ŏr'-) n. [Lat. os, or-, mouth + NASAL-] A speech sound, as a French nasal vowel pronounced with both oral

and nasal passages open. —o'ri-na'sal adj. o-ri-ole (ôr'ē-ōl', ōr'-) n. [Fr. oriol < OFr. < Med. Lat. oriolus < Lat. aureolus, golden < aureus < aurum, gold:] 1. Any of various Old World birds of the family Oriolidae, having bright yellow and black plumage in the males. 2. Any of various New World birds of the family Icteridae, having black and orange or yellow plumage in the

O-ri-on (ö-ri'on).n. [Gk. Orion.] L. Gk. Myth. A giant hunter, pursuer of the Pleiades and lover of Eos; killed by Artemis. 2: A constellation in the celestial equator.

orri-son (ori-son, -zon, or'-) n. [ME orisoun < OFr. oraison < Lat. oratio, speech < orare, to speak.] A prayer.

O-ri-ya (ô-re'yo) n. The Indic language of Orissa, a state in eastern India.

Orle-an-ist (ôr'le-a-nist) n: A supporter of the Orleans branch of the French royal family, descended from a younger brother of Louis XIV Orlon (ôr'lon'). A trademark for a synthetic acrylic fiber.

orlop (ôr'lop') n. [ME overloper, floor covering a ship's hold < MDu. overloop: over, over + loopen, to leap.] Naut. The lowest deck of a ship, esp. a warship.

Ormazd also Ormuzd (ôrməzd) n. [Pers. Ormazd < Avestan Ahura-Mazda: ahura, spirit + mazda, wise.] The supreme deity of Zoroastrianism, the creator of the world, the source of light, and the embodiment of good.

ormer (or mor) n. [Dial. Fr. < Fr. ormier, short for oreille-de-mer, ear of the sea < Lat. auris maris.] Chiefly Brit. An abalone shell, esp. the shell of an edible species, Haliotis tuberculata, found chiefly in the Channel Islands.

ormo·lu (ôr'mə·loo') n. [Fr. or moulu; ground gold.] 1. A copper and tin or zinc alloy resembling gold in appearance and used to decorate furniture and jewelry. 2. An imitation of gold. Or muzd (Ar mazd) n. var. of ORMAZD.

ornament (ôrnament) n. [ME ournement < Ofr. ornement < Lat. ornamentum < ornate, to embellish.] 1. Something that decorates or adorns: EMBELLISHMENT. 2. One regarded as a source of credit, honor, or pride <an ornament to one's school> 3. Mus. A note or group of notes that embellishes a melody. -vt. (-ment') ment-ed, -ment-ing, -ments. 1. To furnish with ornaments. 2. To be an ornament to, -or na ment'er n.

or-na-men-tal (ôr'no-men'tl) adj. Of, relating to, or being an ornament. —n. Something ornamental, esp. a plant grown for its beauty. -or'na men'tal·ly adv. :

ornamentation (orno-mentashon) n. 1. a. The act or process of ornamenting. b. The state of being ornamented. 2 ORNA-MENT 1. 26, 16

ornate (ôr-nāt') adj. [ME < Lat. ornatus, p.part. of ornare, to embellish.] 1. Elaborately and heavily ornamented. 2. Showy or florid in style or manner: FLOWERY. -ornate'ly adv. -ornate'ness n. ** SYNS: ORNATE, BAROQUE, FLAMBOYANT, FLORID, ROCOCO adj core meaning: elaborately and heavily ornamented <an ornate Ba-

varian palace > ant: austere.

ornery (ôr'nə-rē) adi. -i-er, -i-est. [Alteration of ORDINARY.] Stubborn and ill-tempered ... 200 300 :

ornith- pref. var. of ORNITHO.
ornithic (ornithik) adj. [Gk. ornithikos < ornis, bird.] Of, per-

taining to, or characteristic of birds. ornithine (ôr'na-thên') n. [E. ornith(uric acid), an acid found in